

IN THE SPECIFICATION

✓ Please replace pages 1-57 of the specification (the entire specification excluding the claims and abstract) with substitute pages 1-90 of the specification, enclosed herein at Appendix A).[†]

IN THE CLAIMS

✓ Please cancel claims 1-37. Please add claims 38-159, enclosed herein at Appendix B).

REMARKSThe Amendments to the Specification

Applicant has replaced originally-filed pages 1-57 of the specification with substitute pages 1-90. Applicant has replaced the first paragraph on originally-filed page 1 of the specification with a paragraph that correctly recites the continuation information for the instant application. The corrected continuation information on substitute page 1 is identical to that in the Correction of Claim for Priority Under 37 C.F.R. § 1.78 filed January 17, 2002.

Applicant has capitalized all trademarks throughout the specification, as requested by the Examiner. See, e.g., page 9, 39, 43-47, 49 and 51-53 of the originally-filed specification. Further, applicant has deleted reference to the URL on page 56 of the specification as originally filed.

[†] Applicant have enclosed herewith a "Version Showing Changes Made" at Appendix C, wherein deleted material is bracketed and added material is underlined.

Applicant has added paragraph numbering and line numbering to the specification to aid in providing positions in the specification.

The Amendments to the Claims

Applicant has canceled claims 1-37 without prejudice. Applicants reserve the right to pursue the canceled subject matter in subsequent applications that claim benefit from the instant application. Support for added claims 38-159 may be found throughout the specification. Specific support for the substitute claims is provided in the table provided at Appendix D (page numbers refer to those of the substitute specification).

The Claim for Priority

The Examiner states that applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. § 120 because the application does not contain a specific reference to the prior application in the first sentence of the specification. 37 C.F.R. § 1.78.

Applicant amended the first paragraph of the specification in a Correction of Claim for Priority, filed January 17, 2002. Further, applicant has included the corrected continuation information in the substitute specification filed herewith. Therefore, applicant has complied with the requirements of 35 U.S.C. § 120 for receiving the benefit of an earlier filing date.

The Drawings

The Examiner states that the application has been filed with informal drawings that are acceptable for examination purposes only. Form PTO 948 states that the margins of Figures 1-3 are not acceptable and that the lines, numbers and letters for Figures

1-5D are not uniformly thick and well defined, clean, durable and black. The Examiner states that applicant is required to submit formal drawings in response to the Office Action.

Applicant encloses herewith formal drawings for Figures 1-6 (Appendix E), thereby obviating this objection.

The Specification

The Examiner has objected to the specification as allegedly attempting to incorporate subject matter into the application by reference to an internet URL. Applicant has deleted reference to the URL in the substitute specification, as requested by the Examiner.

The Examiner states that trademarks should be capitalized wherever they appear and be accompanied by generic technology. Applicant has amended the specification to capitalize all trademarks and accompany them by generic technology where necessary.

The Claims Objections

The Examiner states that claims 29 and 35 are objected to under 37 C.F.R. § 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant has canceled claims 29 and 35. None of the currently pending claims is in improper dependent form.

The Rejections

Without acquiescing to the rejections under 35 U.S.C. §§ 112, 102 and 103 of former claims 1-37, applicant has addressed these rejections only with respect to added claims 38-159 in order to expedite prosecution.

The Rejection Under 35 U.S.C. § 112

The Examiner states that claims 19 and 28 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the recitations of "the vector-DNA" in claim 19 and "the carrier-DNA" in claim 28 do not have sufficient antecedent basis. Applicant traverses.

None of the added claims 38- recites "the vector-DNA" or "the carrier-DNA". Thus, the pending claims are not indefinite.

The Rejection Under 35 U.S.C. § 102

The Examiner has rejected claims 25, 26, 28, 29, 31, 32, 34, 35 and 37 under 35 U.S.C. § 102(b) as allegedly being anticipated by United States Patent 5,591,567 to Britten et al. ("the '567 patent"). The Examiner states that the '567 patent discloses a method in of affixing DNA to a surface in a defined array where the DNA is mixed with agar (gelatin) and cells are placed on the array to transfer the DNA mixture to the cells on the array. Applicant traverses.

Added claims 127-159, which recite a method of affixing nucleic acid molecules to surface, or to an array prepared thereby, all recite that the array has a density of at least 10^2 different defined locations per square centimeter, which is not taught or

suggested by the '567 patent, which merely proposes spacing bacteriophage plaques at 2 mm spacing. Thus, the '567 patent does not anticipate or render obvious the pending claims.

The Rejection Under 35 U.S.C. § 103

The Examiner has rejected claims 1-37 under 35 U.S.C. § 103(a) as allegedly being unpatentable over United States Patent 5,811,274 ("the '274 patent") in view of the '567 patent. The Examiner states that the '274 patent teaches a method of reverse transfection of eukaryotic cells by producing a surface to which DNA has been deposited and dried, then plating cells onto the surface to allow the DNA to enter the cells. The Examiner admits that the '274 patent does not teach an array or that the expressed protein may be detected on the surface of the cells with an antibody, but states that the '567 patent teaches a method of producing an array of DNA on a surface to allow the reverse transfection of cells plated on the array.

The Examiner states that the '274 patent teaches the use of the method to improve efficiency of introducing DNA into target cells, while the '567 patent teaches the use of an immobilized array of DNA in a method that improves the efficiency of introduction into target cells. The Examiner contends that it would have been obvious to one of ordinary skill in the art to combine the teachings of the '274 patent and the '567 patent because both patents teach the introduction of immobilized DNA into cells plated onto the surface. The Examiner alleges that one would have been motivated to combine the teachings of the '274 patent and the '567 patent to improve the efficiency of introducing DNA into target cells by first immobilizing the DNA onto a surface and then plating cells

APR-28-00 13:00 PLOM-CLARK & ELBING LLP 617-428-7045 T-493 P.017/019 F-212

onto the surface to introduce DNA into the cells. The Examiner contends that a person having ordinary skill in the art would have had a reasonable expectation of success given the teachings of the '274 and '567 patents. Applicant traverses.

Contrary to the Examiner's assertion, the '567 patent does not teach either a method of producing an array of DNA on a surface to allow the reverse transfection of cells plated onto the array or the desirable use of an immobilized array of DNA to improve the efficiency of DNA introduction into target cells. The '567 patent states only that one can plate either bacteriophage or bacterial colonies onto an agar plate in a regular array. See, e.g., column 3, lines 11-14 and column 4, lines 37-50. An array consisting of bacterial colonies does not teach or suggest transfection of cells because the bacterial colonies already comprise the DNA of interest. Further, the '567 patent does not teach or suggest plating bacterial cells onto a bacteriophage array. In fact, the '567 patent is completely silent regarding the introduction of DNA into cells. Thus, the '567 patent completely fails to teach or suggest what the Examiner asserts.

Given that the '567 patent does not teach or suggest that it would be desirable to use an array of DNA to improve the efficiency of the introduction of the DNA into target cells, it would not have been obvious to one having ordinary skill in the art at the time of filing to combine the teachings of the '274 patent and the '567 patent. The '274 patent teaches only a method of transfecting cells by depositing particles, such as retroviral particles, on a cell growth support and contacting cells to the support in order to increase transfection efficiencies. See, e.g., column 3, lines 21-26, column 6, line 66 to column 7, line 2. There is no teaching or suggestion in the '274 patent to deposit particles in an array,

as admitted by the Examiner, and there is no teaching or suggestion in the '567 patent to use an array of DNA to improve the efficiency of the introduction of the DNA into target cells. Thus, it would not have been obvious to combine these teachings.

There is also no motivation in the '274 patent or the '567 patent to combine their teachings. Neither the '274 patent nor the '567 patent, either alone or together, teaches or suggests how to modify their teachings to produce the claimed invention. In addition, neither patent teaches or suggests the desirability of an array of nucleic acid molecules that can be introduced into eukaryotic cells in the location in which the nucleic acid molecules were deposited. Further, the two patents are drawn to two distinct and different problems: the '274 patent is drawn to methods of increasing transfection efficiency, particularly in eukaryotic cells, while the '567 patent is drawn to methods of plating bacteriophage or bacterial colonies in an array. Thus, one having ordinary skill in the art at the time the invention was made would not have been motivated to combine the teachings of the '567 patent with the teachings of the '274 patent, because the two patents are drawn to completely different technical problems.

Conclusion

For the reasons presented above, applicant requests allowance of claims 38-

159.

Respectfully submitted,

Karen E. Brown

Denise L. Loring (Reg. No. 32,259)
Barbara A. Ruskin (Reg. No. 39,350)
Attorneys for Applicant(s)
Karen E. Brown (Reg. No. 43,886)
Agent for Applicant (s)
FISH & NEAVE
Customer No. 1473
1251 Avenue of the Americas
New York, New York 10020-1104
Tel.: (212) 596-9000
Fax: (212) 596-9090